<u>Amendments to the Claims</u>

Please make the following amendments to the Claims:

1.   (Currently amended) An apparatus for automatically selecting a copy function, the apparatus comprising:

an identification module configured to identify one or more available copy functions in response to a data copy request to copy data to a secondary storage device, the identification module identifying each identified copy function by determining that the copy function is ~~compatible with the secondary storage device and~~ available to an application to copy data of the data copy request to the secondary storage device, the secondary storage device comprising one of one or more secondary storage devices available to the application for storing the data;

a comparison module configured to compare one or more copy function attributes of each ~~available~~ <u>identified</u> copy function to corresponding copy policy ~~attributes~~<u>objectives</u> of a predefined copy policy, wherein the copy policy comprises a set of copy policy ~~attributes~~ <u>objectives</u> that correspond to the copy function attributes of each copy function, ~~wherein the copy function attributes comprise predefined values that indicate functionality characteristics of the corresponding copy function~~<u>the copy policy objectives comprising one or more of a recovery point objective, a recovery time objective, a location, a consistency, and an application impact</u>;

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a selection module configured to automatically select a copy function that satisfies the predefined copy policy based on the comparison of the copy function attributes to the corresponding ~~attribute~~ objectives of the copy policy; and

a relationship module configured to establish a copy relationship between the selected copy function and the data copy request, the copy relationship configured to use the selected copy function to copy the <u>requested</u> data to a secondary storage device,

wherein the identification module, the comparison module, the selection module, and the relationship module comprise at least one of hardware and executable code, the executable code executable on a processor and stored on one or more computer readable media.

2.   (Currently amended) The apparatus of claim 1, further comprising a policy generation module configured to read a set of required ~~attributes~~<u>objectives</u> from the application and to establish the predefined copy policy based on the set of required ~~attributes~~<u>objectives</u> from the application.

3.   (Currently amended) The apparatus of claim 1, further comprising a policy generation module configured to allow a user to determine the predefined copy policy based on a set of required ~~attributes~~<u>objectives</u> from an application.

4. (Previously presented) The apparatus of claim 1, wherein the identification module is further configured to determine a set of copy functions compatible with the application, determine a set of copy functions compatible with a source storage device, where the data of the data request is stored, and the secondary storage device, and to determine available copy functions that are common to both the set of copy functions compatible with the application and the set of copy functions that are compatible with the source storage device and the secondary storage device.

5. (Currently amended) The apparatus of claim 1, wherein the comparison module is further configured to compare one or more copy function attributes of a copy function to corresponding predefined copy policy ~~attributes~~objectives, of the predefined copy policy, for each of a group of available copy functions and the selection module is further configured to select a copy function with a largest number of copy function attributes that satisfy the predefined copy policy ~~attributes~~objectives.

6. (Currently amended) The apparatus of claim 1, wherein the comparison module is further configured to calculate a difference between one or more copy function attributes, each configured as a numerical value, and corresponding predefined copy policy ~~attributes~~objectives, each configured as a numerical value, for each of a group of available copy functions and the selection module is further configured to select a copy function where the total difference between the numerical values of the copy function

attributes and the numerical values of the predefined copy policy ~~attributes~~<u>objectives</u> is the smallest.

7.   (Currently amended) The apparatus of claim 1, wherein the comparison module is further configured to compare one or more copy function attributes to corresponding predefined copy ~~function~~ <u>policy</u> ~~attributes~~<u>objectives</u> for each of the available copy functions to determine a score for each attribute of each copy function, to multiply each score by a priority factor to determine an adjusted score, to sum the adjusted scores for each copy function, and the selection module is further configured to select a copy function with a highest sum of adjusted scores.

8.   (Currently amended) The apparatus of claim 1, wherein the comparison module is further configured to calculate a difference between one or more copy function attributes, each configured as a numerical value, and corresponding predefined copy policy ~~attributes~~<u>objectives</u> for each of the available copy functions, to multiply each difference by a priority factor to obtain an adjusted difference, to sum the adjusted differences for each copy function, and the selection module is further configured to select a copy function with a lowest sum of adjusted differences.

9.   (Currently amended) An apparatus for automatically selecting a copy function, the apparatus comprising:

a policy generation module configured to establish a copy policy compatible with an application, the copy policy comprising one or more copy policy ~~attributes~~objectives, the copy policy objectives comprising one or more of a recovery point objective, a recovery time objective, a location, a consistency, and an application impact; and

a copy request module configured to:

recognize a data copy request that included the copy policy;

identify one or more available copy functions in response to a data copy request to copy data to a secondary storage device by determining that each copy function is ~~compatible with one or more secondary storage devices and~~ available to the application to copy data to a secondary storage device of the one or more secondary storage devices, the one or more secondary storage devices available to the application for storing data;

compare copy function attributes of each copy function for a storage device to copy policy ~~attributes~~objectives of the copy policy, wherein the copy policy comprises a set of copy policy ~~attributes~~objectives that correspond to the copy function attributes of each copy function~~, wherein the copy function attributes comprise predefined numerical values that indicate~~

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~~functionality characteristics of the corresponding copy~~

~~function~~;

automatically select a copy function that satisfies the copy policy

based on the comparison of the copy function attributes to the

corresponding ~~attribute~~ objectives of the copy policy; and

establish a copy relationship between the selected copy function and

the data copy request, the copy relationship configured to use

the selected copy function to copy the <u>requested</u> data to a

secondary storage device

wherein the policy generation module and the copy request module comprise at least

one of hardware and executable code, the executable code executable on a

processor and stored on one or more computer readable media.

10. (Currently amended) The apparatus of claim 9, wherein the policy generation module is

configured to read a set of required ~~attributes~~<u>objectives</u> from the application and to

establish a copy policy based on the set of required ~~attributes~~<u>objectives</u> from the

application.

11. (Currently amended) The apparatus of claim 9, wherein the policy generation module is

configured to allow a user to determine a predefined copy policy based on a set of

required ~~attributes~~<u>objectives</u> from the application.

12. (Previously presented) The apparatus of claim 9, wherein identifying available copy functions further comprises determining a set of copy functions compatible with the application, determining a set of copy functions compatible with a source storage device and the secondary storage device, and determining available copy functions that are common to both the set of copy functions compatible with the application and the set of copy functions that are compatible with the source storage device and the secondary storage device.

13. (Currently amended) The apparatus of claim 9, wherein comparing attributes of each copy function for a storage device to ~~attributes~~<u>objectives</u> of the copy policy further comprises comparing one or more copy function attributes to corresponding copy policy ~~attributes~~<u>objectives</u>, of the predefined copy policy, for each of a group of available copy functions and automatically selecting a copy function further comprises selecting a copy function with a largest number of copy function attributes that satisfy the predefined copy policy ~~attributes~~<u>objectives</u>.

14. (Currently amended) The apparatus of claim 9, wherein comparing attributes of each copy function for a storage device to ~~attributes~~<u>objectives</u> of the copy policy further comprises calculating a difference between one or more copy function attributes, each configured as a numerical value, and corresponding predefined copy policy ~~attributes~~<u>objectives</u>, each configured as a numerical value, for each of the available copy functions and

automatically selecting a copy function further comprises selecting a copy function where differences between the copy function attributes and the predefined copy policy ~~attributes~~objectives are the smallest.

15.   (Currently amended) The apparatus of claim 9, wherein comparing attributes of each copy function for a storage device to ~~attributes~~objectives of the copy policy further comprises comparing one or more copy function attributes, each configured as a numerical value, to corresponding predefined copy policy ~~attributes~~objectives, each configured as a numerical value, for each of the available copy functions, determining a score for each attribute of each copy function, multiplying each score by a priority factor to determine an adjusted score, summing the adjusted scores for each copy function, and automatically selecting a copy function further comprises selecting a copy function with a highest sum of adjusted scores.

16.   (Currently amended) The apparatus of claim 9, wherein comparing attributes of each copy function for a storage device to ~~attributes~~objectives of the copy policy further comprises calculating a difference between one or more copy function attributes, each configured as a numerical value, and corresponding copy policy ~~attributes~~objectives, each configured as a numerical value, for each of the available copy functions, multiplying each difference by a priority factor to obtain an adjusted difference, summing the adjusted differences for

each copy function, and automatically selecting a copy function further comprises
selecting a copy function with a lowest sum of adjusted differences.

17.   (Currently Amended) A system for automatically selecting a copy function, the system
comprising:

a file server comprising

an application module configured to send a data copy request from an
application;

an identification module configured to identify one or more available
copy functions in response to a data copy request to copy data
to a secondary storage device, the identification module
identifying each copy function by determining that the copy
function is ~~compatible with the secondary storage device and~~
available to the application to copy data of the data copy
request to the secondary storage device, the secondary storage
device comprising one of one or more secondary storage
devices available to the application for storing the data;

a comparison module configured to compare one or more copy
function attributes of each available copy function to
corresponding copy policy ~~attributes~~<u>objectives</u> of a predefined
copy policy, wherein the copy policy comprises a set of copy

policy ~~attributes~~objectives that correspond to the copy function attributes of each copy function, ~~wherein the copy function attributes comprise predefined values that indicate functionality characteristics of the corresponding copy function~~ the copy policy objectives comprising one or more of a recovery point objective, a recovery time objective, a location, a consistency, and an application impact;

a selection module configured to automatically select a copy function that satisfies the predefined copy policy based on the comparison of the copy function attributes to the corresponding ~~attribute~~ objectives of the copy policy;

a relationship module configured to establish a copy relationship between the selected copy function and the data copy request, the copy relationship configured to use the selected copy function to copy the requested data to a secondary storage device.

18. (Currently amended) The system of claim 17, further comprising a policy generation module configured to read a set of required ~~attributes~~objectives from the application and to establish a predefined copy policy based on the set of required ~~attributes~~objectives from the application.

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19. (Currently amended) The system of claim 17, further comprising a policy generation module configured to allow a user to determine a predefined copy policy based on a set of required ~~attributes~~objectives from an application.

20. (Previously presented) The system of claim 17, wherein the identification module is further configured to determine a set of copy functions compatible with the application, determine a set of copy functions compatible with a source storage device, where the data of the data request is stored, and the secondary storage device, and to determine available copy functions that are common to both the set of copy functions compatible with the application and the set of copy functions that are compatible with the source storage device and the secondary storage device.

21. (Currently amended) The system of claim 17, wherein the comparison module is further configured to compare one or more copy function attributes to corresponding predefined copy policy ~~attributes~~objectives, of the predefined copy policy, for each of a group of available copy functions and the selection module is further configured to select a copy function with a largest number of copy function attributes that satisfy the predefined copy policy ~~attributes~~objectives.

22. (Currently amended) The system of claim 17, the comparison module is further configured to calculate a difference between one or more copy function attributes, each

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configured as a numerical value, and corresponding predefined copy policy ~~attributes~~<u>objectives</u>, each configured as a numerical value, for each of a group of available copy functions and the selection module is further configured to select a copy function where differences between the copy function attributes and the predefined copy policy ~~attributes~~<u>objectives</u> are the smallest.

23.   (Currently amended) The system of claim 17, wherein the comparison module is further configured to compare one or more copy function attributes to corresponding predefined copy function ~~attributes~~<u>objectives</u> for each of the available copy functions to determine a score for each attribute of each copy function, to multiply each score by a priority factor to determine an adjusted score, to sum the adjusted scores for each copy function, and the selection module is further configured to select a copy function with a highest sum of adjusted scores.

24.   (Currently amended) The system of claim 17, wherein the comparison module is further configured to calculate a difference between one or more copy function attributes, each configured as a numerical value, and corresponding predefined copy policy ~~attributes~~<u>objectives</u> for each of the available copy functions, to multiply each difference by a priority factor to obtain an adjusted difference, to sum the adjusted differences for each copy function, and the selection module is further configured to select a copy function with a lowest sum of adjusted differences.

25.   (Currently Amended) A method for automatically selecting a copy function, the method comprising:

identifying one or more available copy functions in response to a data copy request that includes a predefined copy policy, the data copy request to copy data to a secondary storage device, the identifying comprising identifying each copy function by determining that the copy function is ~~compatible with the secondary storage device and~~ available to an application to copy data of the data copy request to the secondary storage device, the secondary storage device comprising one of one or more secondary storage devices available to the application for storing the data;

comparing one or more copy function attributes of each available copy function to corresponding copy policy ~~attributes~~objectives of ~~the~~ a predefined copy policy, wherein the copy policy comprises a set of copy policy ~~attributes~~objectives that correspond to the copy function attributes of each copy function, ~~wherein the copy function attributes comprise predefined values that indicate functionality characteristics of the corresponding copy function~~ the copy policy objectives comprising one or more of a recovery point objective, a recovery time objective, a location, a consistency, and an application impact;

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automatically selecting a copy function that satisfies the predefined copy policy based on the comparison of the copy function attributes to the corresponding ~~attribute~~ objectives of the copy policy; and

establishing a copy relationship between the selected copy function and the data copy request, the copy relationship configured to use the selected copy function to copy the <u>requested</u> data to a secondary storage device.

26. (Currently amended) The method of claim 25, further comprising reading a set of required ~~attributes~~<u>objectives</u> from the application and establishing a predefined copy policy based on the set of required ~~attributes~~<u>objectives</u> from the application.

27. (Currently amended) The method of claim 25, further comprising allowing a user to determine a predefined copy policy based on a set of required ~~attributes~~<u>objectives</u> from an application.

28. (Previously presented) The method of claim 25, identifying available copy functions further comprises determining a set of copy functions compatible with the application, determining a set of copy functions compatible with a source storage device, where the data of the data request is stored, and the secondary storage device, and determining available copy functions that are common to both the set of copy functions compatible

with the application and the set of copy functions that are compatible with the source

storage device and the secondary storage device.

29. (Currently amended) The method of claim 25, wherein comparing one or more attributes

of each available copy function corresponding ~~attributes~~objectives of the predefined copy

policy further comprises comparing one or more copy function attributes to corresponding

predefined copy policy ~~attributes~~objectives, of the predefined copy policy, for each of a

group of available copy functions and automatically selecting a copy function that

satisfies the predefined copy policy further comprises selecting a copy function with a

largest number of copy function attributes that meet the predefined copy policy

~~attributes~~objectives.

30. (Currently amended) The method of claim 25, wherein comparing one or more attributes

of each available copy function corresponding ~~attributes~~objectives of the predefined copy

policy further comprises calculating a difference between one or more copy function

attributes, each configured as a numerical value, and corresponding predefined copy

policy ~~attributes~~objectives, each configured as a numerical value, for each of the available

copy functions and automatically selecting a copy function that satisfies the predefined

copy policy further comprises selecting a copy function where differences between the

copy function attributes and the predefined copy policy ~~attributes~~objectives are the

smallest.

31.   (Currently amended) The method of claim 25, wherein comparing one or more attributes of each available copy function corresponding ~~attributes~~objectives of the predefined copy policy further comprises comparing one or more copy function attributes to corresponding predefined copy policy ~~attributes~~objectives for each of the available copy functions, determining a score for each attribute of each copy function, multiplying each score by a priority factor to determine an adjusted score, summing the adjusted scores for each copy function, and automatically selecting a copy function that satisfies the predefined copy policy further comprises selecting a copy function with a highest sum of adjusted scores.

32.   (Currently amended) The method of claim 25, wherein comparing one or more attributes of each available copy function corresponding ~~attributes~~objectives of the predefined copy policy further comprises calculating a difference between one or more copy function attributes, each configured as a numerical value, and corresponding predefined copy policy ~~attributes~~objectives, each configured as a numerical value, for each of the available copy functions, multiplying each difference by a priority factor to obtain an adjusted difference, summing the adjusted differences for each copy function, and automatically selecting a copy function that satisfies the predefined copy policy further comprises selecting a copy function with a lowest sum of adjusted differences.

33.   (Cancelled)

34. (Cancelled)

35. (Cancelled)

36. (Cancelled)

37. (Cancelled)

38. (Currently Amended) A computer readable storage medium comprising computer readable code configured to carry out a method for automatically selecting a copy function, the method comprising:

identifying one or more available copy functions in response to a data copy request to copy the data that includes a predefined copy policy, the data copy request to copy the data to a secondary storage device, the identifying comprising identifying each copy function by determining that the copy function is compatible with the secondary storage device and available to an application to copy the data to the secondary storage device, the secondary storage device comprising one of one or more secondary storage devices available to the application for storing the data;

comparing one or more copy function attributes of each available copy function to corresponding copy policy ~~attributes~~objectives of the predefined copy policy, wherein the copy policy comprises a set of copy policy ~~attributes~~objectives

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that correspond to the copy function attributes of each copy function, ~~wherein the copy function attributes comprise predefined values that indicate functionality characteristics of the corresponding copy function,~~ wherein the predefined copy policy ~~attributes~~objectives within the predefined copy policy comprise a recovery point objective ("RPO"), a recovery time objective ("RTO"), a distance to a secondary site where the secondary storage device is stored, a consistency, and an application impact, wherein an RPO comprises an amount of data lost over a period of time, wherein an RTO comprises an amount of time to recover data to a usable condition, wherein a consistency comprises a determination of dependency on other stored data, wherein an application impact comprises a performance impact caused by a copy function to the application, the performance impact measured in a unit of time;

automatically selecting a copy function that satisfies the predefined copy policy based on the comparison of the copy function attributes to the corresponding ~~attribute~~ objectives of the copy policy; and

establishing a copy relationship between the selected copy function and the data copy request, the copy relationship configured to use the selected copy function to copy the <u>requested</u> data to a secondary storage device.

39.   (Previously presented) The computer readable storage medium of claim 38, wherein

identifying available copy functions further comprises determining a set of copy functions

compatible with the application, determining a set of copy functions compatible with a

source storage device, where the data of the data request is stored, and the secondary

storage device, and determining available copy functions that are common to both the set

of copy functions compatible with the application and the set of copy functions that are

compatible with the source storage device and the secondary storage device.

40-45. (Cancelled)